Description

Quick reference data

$V_{BR\ MIN}$ = 6.12 -180V
V_{RWM} = 5.2 - 152V
V_C (max) = 11 - 273V
$I_{(BR)}$ 1N6138 - 1N6173 = 5mA - 175mA

Features

- Low dynamic impedance
- Hermetically sealed non-cavity construction
- 1500 watt peak pulse power
- 7.5W continuous

These products are qualified to MIL-PRF-19500/516 and are preferred parts as listed in MIL-HDBK-5961. They can be supplied fully released as JANTX and JANTXV versions.

Electrical Specifications

Electrical specifications @ T_A = 25°C unless otherwise specified.

Device Type	Minimum Breakdown Voltage $V_{(BR)}$ @ $I_{(BR)}$	Test Current $I_{(BR)}$	Working Pk. Reverse Voltage V_{RWM}	Maximum Reverse Current I_{R1}	Maximum Clamping Voltage V_C @ I_P	Maximum Pk. Pulse Current I_P T_P = 1mS	Temp. Coeff. of $V_{(BR)}$ $\alpha_{(VZ)}$	Maximum Reverse Current I_{R2} @ 150°C
	Volts	mA	Volts	µA	Volts	Amps	%/°C	µA
1N6138	6.12	175	5.2	500	11.0	136.4	0.05	12,000
1N6139	6.75	175	5.7	300	11.8	127.1	0.06	3,000
1N6139A	7.13	175	5.7	300	11.2	133.9	0.06	3,000
1N6140	7.38	150	6.2	100	12.7	118.1	0.06	2,000
1N6140A	7.79	150	6.2	100	12.1	124.0	0.06	2,000
1N6141	8.19	150	6.9	100	14.0	107.1	0.06	1,200
1N6141A	8.65	150	6.9	100	13.4	111.9	0.06	1,200
1N6142	9.0	125	7.6	100	15.2	98.7	0.07	800
1N6142A	9.5	125	7.6	100	14.5	103.4	0.07	800
1N6143	9.9	125	8.4	20	16.3	92.0	0.07	800
1N6143A	10.45	125	8.4	20	15.6	96.2	0.07	800
1N6144	10.8	100	9.1	20	17.7	84.7	0.07	600
1N6144A	11.4	100	9.1	20	16.9	88.8	0.07	600
1N6145	11.7	100	9.9	20	19.0	78.9	0.08	600
1N6145A	12.35	100	9.9	20	18.2	82.4	0.08	600
1N6146	13.5	75	11.4	20	21.9	68.5	0.08	400
1N6146A	14.25	75	11.4	20	21.0	71.4	0.08	400
1N6147	14.4	75	12.2	20	23.4	64.1	0.08	400
1N6147A	15.2	75	12.2	20	22.3	67.3	0.08	400

Electrical Specifications

Electrical specifications @ T_A = 25°C unless otherwise specified.

Device Type	Minimum Breakdown Voltage $V_{(BR)}$ @ $I_{(BR)}$	Test Current $I_{(BR)}$	Working Pk. Reverse Voltage V_{RWM}	Maximum Reverse Current I_{R1}	Maximum Clamping Voltage V_C @ I_P	Maximum Pk. Pulse Current I_P T_P = 1mS	Temp. Coeff. of $V_{(BR)}$ $\alpha_{(VZ)}$	Maximum Reverse Current I_{R2} @ 150°C
	Volts	mA	Volts	µA	Volts	Amps	%/°C	µA
1N6148	16.2	65	13.7	10	26.3	57.0	0.085	400
1N6148A	17.1	65	13.7	10	25.1	59.8	0.085	400
1N6149	18.0	65	15.2	5	29.0	51.7	0.085	400
1N6149A	19.0	65	15.2	5	27.7	54.2	0.085	400
1N6150	19.8	50	16.7	5	31.9	47.0	0.085	400
1N6150A	20.9	50	16.7	5	30.5	49.2	0.085	400
1N6151	21.6	50	18.2	5	34.8	43.1	0.09	400
1N6151A	22.8	50	18.2	5	33.3	45.0	0.09	400
1N6152	24.3	50	20.6	5	39.2	38.3	0.09	400
1N6152A	25.7	50	20.6	5	37.4	40.1	0.09	400
1N6153	27.0	40	22.8	5	43.6	34.4	0.09	400
1N6153A	28.5	40	22.8	5	41.6	36.0	0.09	400
1N6154	29.7	40	25.1	5	47.9	31.3	0.095	400
1N6154A	31.4	40	25.1	5	45.7	32.8	0.095	400
1N6155	32.4	30	27.4	5	52.3	28.7	0.095	400
1N6155A	34.2	30	27.4	5	49.9	30.1	0.095	400
1N6156	35.1	30	29.7	5	56.2	26.7	0.095	400
1N6156A	37.1	30	29.7	5	53.6	28.0	0.095	400
1N6157	38.7	30	32.7	5	62.0	24.2	0.095	400
1N6157A	40.9	30	32.7	5	59.1	25.4	0.095	400
1N6158	42.3	25	35.8	5	67.7	22.2	0.095	400
1N6158A	44.7	25	35.8	5	64.6	23.2	0.095	400
1N6159	45.9	25	38.8	5	73.5	20.4	0.095	400
1N6159A	48.5	25	38.8	5	70.1	21.4	0.095	400
1N6160	50.4	20	42.6	5	80.7	18.6	0.095	400
1N6160A	53.2	20	42.6	5	77.0	19.5	0.095	400

Electrical Specifications

Electrical specifications @ T_A = 25°C unless otherwise specified.

Device Type	Minimum Breakdown Voltage $V_{(BR)}$ @ $I_{(BR)}$	Test Current $I_{(BR)}$	Working Pk. Reverse Voltage V_{RWM}	Maximum Reverse Current I_{R1}	Maximum Clamping Voltage V_C @ I_P	Maximum Pk. Pulse Current I_P T_P = 1mS	Temp. Coeff. of $V_{(BR)}$ $\alpha_{(VZ)}$	Maximum Reverse Current I_{R2} @ 150°C
	Volts	mA	Volts	µA	Volts	Amps	%/°C	µA
1N6161	55.8	20	47.1	5	89.3	16.8	0.1	400
1N6161A	58.9	20	47.1	5	85.3	17.6	0.1	400
1N6162	61.2	20	51.7	5	98.0	15.3	0.1	400
1N6162A	64.6	20	51.7	5	97.1	15.4	0.1	400
1N6163	67.5	20	56.0	5	108.1	13.9	0.1	400
1N6163A	71.3	20	56.0	5	103.1	14.5	0.1	400
1N6164	73.8	15	62.2	5	118.2	12.7	0.1	400
1N6164A	77.9	15	62.2	5	112.8	13.3	0.1	400
1N6165	81.9	15	69.2	5	131.1	11.4	0.1	400
1N6165A	86.5	15	69.2	5	125.1	12.0	0.1	400
1N6166	90.0	12	76.0	5	144.1	10.4	0.1	400
1N6166A	95.0	12	76.0	5	137.6	10.9	0.1	400
1N6167	99.0	12	83.6	5	158.5	9.5	0.1	400
1N6167A	104.5	12	83.6	5	151.3	9.9	0.1	400
1N6168	108.0	10	91.2	5	172.9	8.7	0.1	400
1N6168A	114.0	10	91.2	5	165.1	9.1	0.1	400
1N6169	117.0	10	98.8	5	187.3	8.0	0.105	400
1N6169A	123.5	10	98.8	5	178.8	8.4	0.105	400
1N6170	135.0	8	114.0	5	216.2	6.9	0.105	400
1N6170A	142.5	8	114.0	5	206.3	7.3	0.105	400
1N6171	144	8	121.6	5	228.8	6.6	0.105	400
1N6171A	152	8	121.6	5	218.4	6.9	0.105	400
1N6172	162	5	136.8	5	257.4	5.8	0.11	400
1N6172A	171	5	136.8	5	245.7	6.1	0.11	400
1N6173	180	5	152.0	5	286.0	5.2	0.11	400
1N6173A	190	5	152.0	5	273.0	5.5	0.11	400

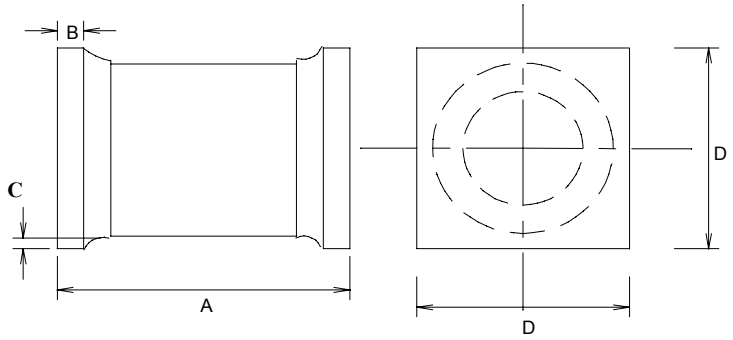
POWER DISCRETES

Ordering Information

Part Number	Description
1N6138US thru 1N6173US 1N6139AUS thru 1N6173AUS	Surface Mount(US) (1)

Note:
(1) Available in trays or tape and reel packaging. Please consult factory for quantities.

Outline Drawing



	Dimensions	
	1N6138US - 1N6173US 1N6139AUS - 1N6173AUS	
	Inches	
	MIN	MAX
A	0.205	0.245
B	0.019	0.028
C	0.003	-
D	0.183	0.202

Contact Information

Semtech Corporation
Power Discretes Products Division
200 Flynn Road, Camarillo, CA 93012
Phone: (805)498-2111 FAX (805)498-3804